REMARKS/ARGUMENTS

Claims 1-20 are pending in the application. Claim 9 is amended herein. The Applicant hereby requests further examination and reconsideration of the application in view of the foregoing amendments and these remarks.

Rejections under 35 U.S.C. 112, Second Paragraph

On page 2 of the office action, the Examiner rejected claims 1-20 under 35 U.S.C. 112, second paragraph, as being indefinite.

Regarding claims 1 and 13, the Examiner stated that "it is unclear how the at least one of the gm cell can be 'configured' to have substantially zero transconductance such that at least one filter section will oscillate." In response, the Applicant submits that Fig. 6 shows a schematic circuit diagram of the architecture of the main components of the third gm cell of biquadratic filter section 510 of tuning circuit 408 of Figs. 4 and 5, where that third gm cell is analogous to gm cell 202c of Fig. 2. According to page 4, lines 19-28, if switches 602 are configured to select the common-mode voltage signal Vcm to the two gm cell inputs, then the third gm cell will have substantially zero transconductance, and biquadratic filter section 510 of Fig. 5 will oscillate. Note that the application does not claim or teach that the entire filter section has substantially zero transconductance, only that at least one of the gm cells in the filter section has substantially zero transconductance. In light of these teachings, the Applicant submits that claims 1 and 13 are not indefinite.

Regarding claim 9, the claim language has been amended to clarify that the information recited in claim 9 is based on the tuning control information recited in claim 9. Support for this amendment is found on page 5, line 19, to page 6, line 2.

Regarding claim 10, in the admitted prior art of Fig. 1, the oscillation of the tuning circuit relies on phase-locked loop circuitry. See, e.g., page 2, line 10. According to claim 10, the oscillation of the at least one filter section does not rely on phase-locked loop circuitry. As such, the recitations in claim 10 further distinguish the invention of claim 10 over the admitted prior art and are not indefinite.

In view of the foregoing, the Applicant submits that the rejections of claims under Section 112, second paragraph, have been overcome.

Prior-Art Rejections

On page 3, the Examiner rejected claims 1-2, 5-11, 13-14, and 16-20 as being as being unpatentable over Jensen. Although the Examiner stated that these claims were rejected under 35 U.S.C. 102(a), the Examiner cited the text of 35 U.S.C. 102(b). The Applicant requests clarification as to the exact grounds of rejection. In any case, as explained below, the Applicant submits that the prior-art rejections are based on a mischaracterization of the teachings in Jensen and are therefore improper.

Original claim 1 is directed to circuitry comprising a filter having one or more filter sections, where at least one of the one or more filter sections comprises a plurality of transconductor (gm) cells, and at least one of the gm cells can be configured to have substantially zero transconductance, such that the at least one filter section will oscillate. Jensen does not teach or even suggest such a combination of features.

Jensen does teach a filter having one or more filter sections, where at least one of those filter sections has a plurality of transconductor (gm) cells, and at least one of the gm cells can be configured to have substantially zero transconductance. Significantly, however, Jensen does not teach or even suggest that the filter section will oscillate when the gm cell has substantially zero transconductance.

Jensen teaches circuitry for tuning a filter. According to Jensen, the filter is tuned to position the filter's resonant frequency ω_0 to the center frequency of the input spectrum X(s). See column 5, line 62, to column 6, line 1. In Jensen, the term "resonant frequency" refers to the frequency at which the filter's noise suppression is maximized. Significantly, in the context of the teachings in Jensen, the term "resonant" does not imply oscillation. There is no teaching or even suggestion in Jensen that any of his filter sections ever oscillate. In fact, oscillation would adversely affect the ability of Jensen's filter to operate properly. That is, if Jensen's filter were to oscillate at his resonant frequency, then Jensen's filter would simply not function as desired.

Jensen explicitly teaches, in column 6, lines 3-6: "If the Gm cell **30** is tuned so that its transconductance G_T=0, the frequency response H(s) simplifies to 1/s, which is the response of an integrator." Since an integrator does not oscillate, Jensen cannot be said to teach oscillation when the transconductance of his Gm cell has "substantially zero transconductance."

For all these reasons, the Applicant submits that claim 1 is allowable over Jensen. For similar reasons, the Applicant submits that claim 13 is allowable over Jensen. Since the rest of the claims depend variously from claims 1 and 13, it is further submitted that those claims are also allowable over Jensen.

Claims 2 and 14

According to claim 2, the at least one filter section is adapted to oscillate at a cutoff frequency of the filter section. In rejecting claims 2 and 14, the Examiner seemed to suggest that Jensen's resonant frequency was a "cut-off" frequency. As explained previously, in Jensen, the resonant frequency is tuned to the center frequency of the filter's response. On the other hand, the cut-off frequency of a filter would refer to the upper or lower frequency of a filter's response. As such, Jensen's resonant frequency is not a cut-off frequency. The Applicant submits that this provides additional reasons for the allowability of claims 2 and 14 over Jensen.

Claims 7 and 17

According to claim 7, the filter comprises a main signal path having one or more filter sections, the at least one filter section is not part of the main signal path, the at least one filter section is a replica of at least one filter section in the main signal path, and the at least one filter section is adapted to be configured to oscillate in order to tune the at least one filter section in the main signal path.

Jensen does not teach or even suggest a filter having a main signal path with one or more filter sections, where the filter also has an other filter section that is not part of the main signal path, where that other filter section is a replica of at least one filter section in the main signal path.

The Applicant submits that this provides additional reasons for the allowability of claim 7 (and similarly claim 17) over Jensen.

In view of the foregoing, the Applicant submits that the rejections of claims under Section 102 have been overcome.

Allowable Subject Matter

On page 3, the Examiner also indicated that claims 3-4, 12, and 15 would be allowable if rewritten to overcome the rejection(s) under Section 112, second paragraph, and to include all of the limitations of the base claim and any intervening claims. In doing so, the Examiner provided specific reasons for the allowability of that subject matter. Those reasons cite only a portion of the claim language from each of claims 3, 12, and 15. The Applicant submits that those claims recite additional language. To that extent, the Applicant objects to the Statement.

In view of the above amendments and remarks, the Applicant believes that the now-pending claims are in condition for allowance. Therefore, the Applicant believes that the entire application is now in condition for allowance, and early and favorable action is respectfully solicited.

Respectfully submitted,

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